



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: STRAUVEN, Yvan
GAY, Bruno

Serial No. 09/936,531

Group: 1746

Filed: September 11, 2001

Examiner: Crepeau, Jonathan

For Centrifugally atomized zinc alloy powder for alkaline batteries

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

DECLARATION UNDER 37 C.R. 1.132

I, Christophe Henninot, declare as follows.

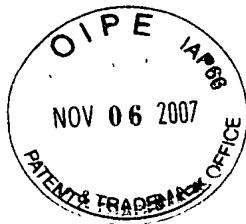
1. I am a technical member of the scientific team that has developed the centrifugal atomization process for zinc powders within the company Umicore and has filed a demand for patent towards the US patent office.
2. A study was conducted under my direction and guidance to determine the 'aspect ratio' of two Zn alloy powders, one of which was made by centrifugal atomization in an atmosphere with 0.05% oxygen (here called Powder Nr 10 or NP10), the other one in an atmosphere with 0.20% oxygen (Powder Nr 14 or NP 14). Both powders had a mean particle size of +/- 200 micron.
3. NP 10 made with 0.05% O₂ had the following elongation ratios:
 - DSCN3127 Elongation: 1.31 (of which picture is annexed)
 - DSCN3131 Elongation: 1.33
 - DSCN3137 Elongation: 1.31So in average; NP 10 made with 0.05% O₂ has an elongation ratio of 1.32

NP 14 made with 0.20% O₂ had the following elongation ratios:

- DSCN3158 Elongation: 1.59
- DSCN3161 Elongation: 1.55 (of which picture is annexed)
- DSCN3164 Elongation: 1.56
- DSCN3167 Elongation: 1.61

So in average; NP 14 made with 0.20% O₂ has an elongation ratio of 1.58.

4. These values are in line with our previous declaration of September 29, 2006:



Elongation ratio:

- 1.00 to 1.30: spherical
- 1.30 to 1.50: close to spherical
- > 1.50: far from any spherical shape

The accuracy of measurement of our O2 device for the pilot is 0.05%.

4. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced application and any patent issuing thereon.

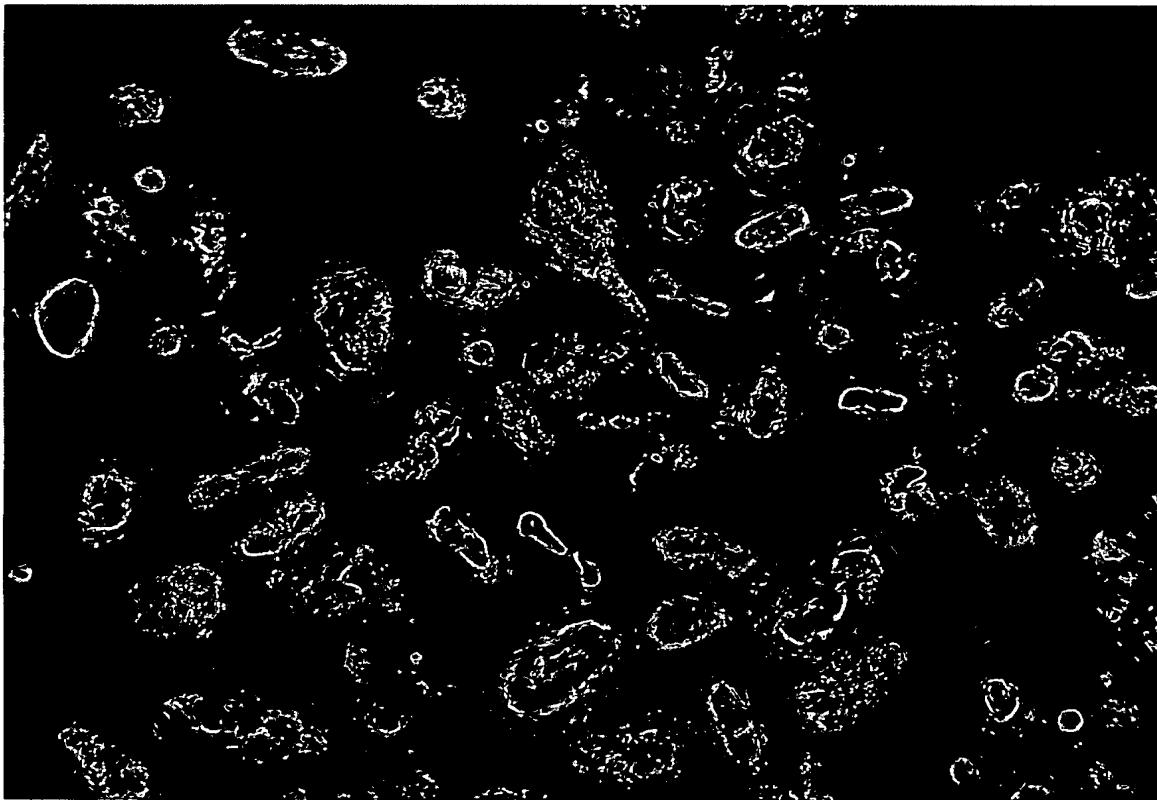
Date: October 17, 2007

A handwritten signature in black ink, appearing to read "Christophe Henninot".

Christophe Henninot



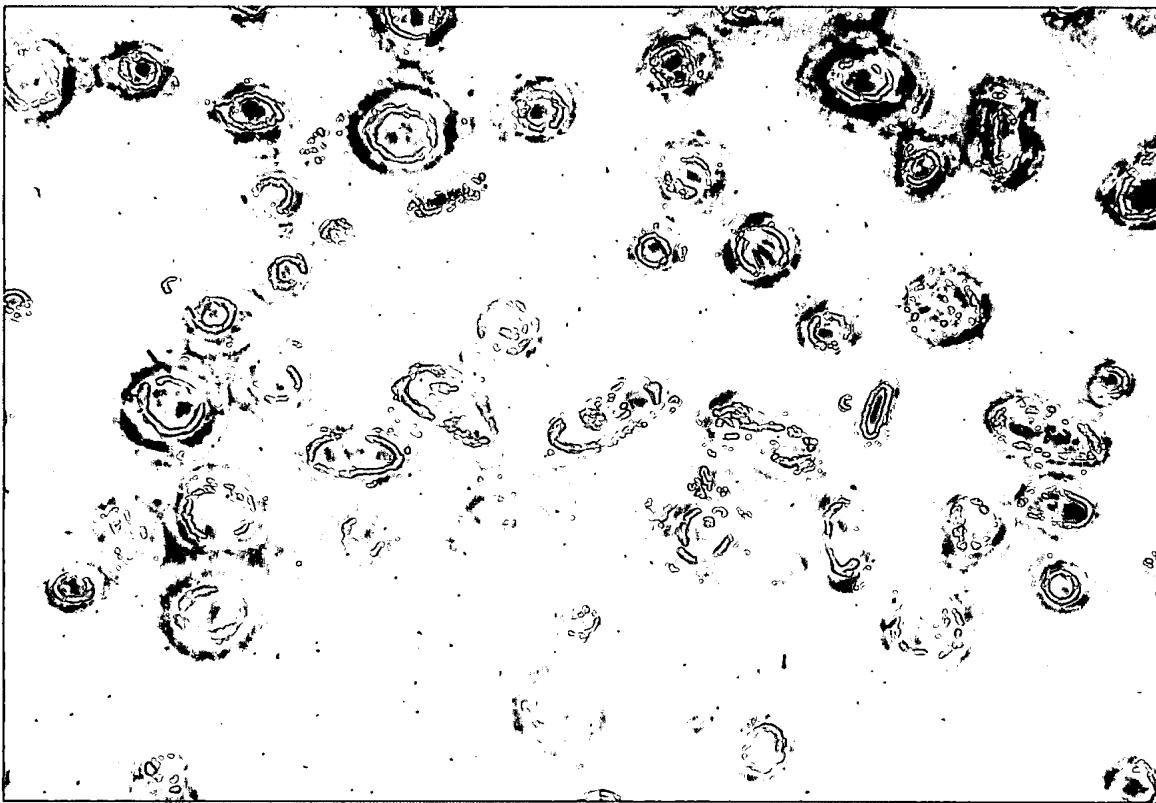
Strauven, Yvan.
S/N: 09/936,531



DSCN 3161 (0.2% oxygen)



straeven, Yvan
S/N: 09/936,531



DSCN 3127 (0.05% oxygen)